

ABSTRACT OF THE DISCLOSURE

An optical recording medium comprising at least a land and a groove where information-recording/reproducing is carried out by a flying type optical head, The optical recording medium keeps the flying height of the flying optical head constant in the entire region of the recording/reproducing area, and is provided with at least one characteristic among the following characteristics: RP which is dependent on land and groove parameters and the flying height satisfies the relation of  $H > R_p \cdot 0.1H$ ; centerline mean roughness Ra is in the range of  $0.2 \text{ nm} \leq R_a \leq 2.0 \text{ nm}$ , and the layer thickness of a liquid lubricant layer satisfies the relation of  $t \leq R_a$ ; the relation of  $\Delta R_p \leq \lambda/16NA$  which is dependent on the effective numerical aperture, laser wavelength and surface parameters is satisfied where all parameters in the formula are defined in the specification; and the height of a header area is different from the height of a land portion.

ABSTRACT OF THE DISCLOSURE

The present invention is to provide an optical recording medium comprising at least a land and a groove, which takes part in recording/reproducing, formed on a substrate wherein at least a reflective layer and a recording layer are formed on the substrate in this order, and information-recording/reproducing is carried out by a flying type optical head, the optical recording medium being a surface recording/reproducing type optical recording medium having high reliability and durability, which is capable of obtaining an excellent recording/reproducing signal uniformly by keeping the flying height of the flying optical head constant in the entire region of the recording/reproducing area, and preventing the head and the recording medium from being broken by the contact of the flying optical head to the recording medium, and being provided with at least one characteristics among the following characteristics:

① When the depth from the maximum height of the land to the centerline of the land and the groove is represented by  $R_p$  and the flying height from the maximum height of the land to the optical head is represented by  $H$  in an optional length on the radius of the optical recording medium in a region for information-recording/reproducing,  $R_p$  satisfies the relation of  $H > R_p \geq 0.1H$ ,

② a centerline mean roughness  $R_a$  of the land and/or

the groove formed in the recording medium is in a range of  $0.2 \text{ nm} \leq Ra \leq 2.0 \text{ nm}$ , and further, the layer thickness  $t$  of a liquid lubricant layer satisfies the relation of  $t \leq 2Ra$  in a case that the liquid lubricant layer is  
5 laminated on a solid lubricant layer,

③ when the effective numerical aperture of the optical head used is represented by  $NA$ , the wavelength of laser used is represented by  $\lambda$ , the depth from the maximum height of the surface of the recording medium to  
10 the centerline of the header is represented by  $R_{ph}$  and the depth from the maximum height of the surface of the recording medium to the centerline of the land and the groove is represented by  $R_{pd}$  in an optional length on the radius of the optical recording medium in a region for  
15 information-recording/reproducing, the relation of  $\Delta R_p \leq \lambda / 16NA$  is satisfied where  $\Delta R_p$  represents the absolute value obtained by subtracting the minimum value of  $R_{pd}$  from the maximum value of  $R_{ph}$  or the absolute value obtained by subtracting the minimum value of  $R_{ph}$  from the  
20 maximum value of  $R_{pd}$ , whichever larger, the values of  $R_{ph}$  and  $R_{pd}$  being obtained by measuring at plural positions, and

④ the height of the header area is different from the height of the land portion.